

Sub-keV dark photon search with S2-only data in PandaX4T

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The PandaX-4T experiment has achieved significant progress in ultra-low energy regions. Here, we present the first search for dark photon signals in the 0.1 - 1 keV energy range, previously unexplored by PandaX-4T. Using Run0+Run1 S2-only data, we set competitive constraints on the kinetic mixing parameter for dark photon masses in the range of 0.1 - 1 keV. This analysis extends the detection sensitivity to sub-keV physics, complementing the existing results from the PandaX-4T experiment.

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